# 3G Information

## Professional Services Committee

#### Report on the Career Technical Education (CTE) Advisory Panel

Executive Summary: This item is the first in a series of items focusing on Career Technical Education (CTE). The item reports on SB 52 (Chap 520 Stats 2007) signed by the Governor on October 12, 2007. This item also describes the current CTE credential structure, the current policy initiatives related to CTE, and the initial recommendations from the CTE Advisory Panel.

**Recommended Action:** For information only

**Presenters:** Helen Hawley, Consultant,

**Professional Services Division** 

Strategic Plan Goal: 1

Promote educational excellence through the preparation and certification of professional educators.

• Sustain high quality standards for the preparation and performance of professional educators and for the accreditation of credential programs.

## Report on the Career Technical Education (CTE) Advisory Panel

#### Introduction

At the December 2006 Commission meeting, staff presented to the Commission a plan to convene an advisory panel to review the credential requirements and program standards for the Designated Subjects: Vocational Education Credentials. Since March 2007, staff has worked with the Career Technical Education (CTE) Advisory Panel (See Appendix A for a list of panel members) in seven meetings over 14 days and focused discussions on the major issues related to the preparation, quality, and assignments of CTE teachers. The charge to the group included the following tasks.

- 1. Review vocational education credential requirements to determine if they are appropriate to meet the need for teachers in today's K-12 schools. Recommend new or modified requirements where necessary.
- 2. Review credential types and authorizations for alignment to the adopted 2005 California Career and Technical Education Standards and the current instructional needs for K-12 vocational education teachers. Recommend changes to the current types and authorizations consistent with these.
- 3. Review and update vocational education teacher preparation program standards to be consistent with California statutes and current research-based best practices for teachers. Recommend updated standards and program requirements to the Commission.

In this agenda item, five overarching recommendations are presented for information. In the December agenda item the proposed credential structure with all recommended requirements will be presented, and at the January-February 2008 Commission meeting, the draft CTE Program Standards will be presented for information.

#### **Background**

Last year, Congress and President Bush reauthorized the Carl Perkins Act. The Carl D. Perkins Career and Technical Educational Improvement Act of 2006 provides increased focus on the academic achievement of career and technical education students, strengthened connections between secondary and postsecondary education, and improved state and local accountability with nearly \$1.3 billion in federal support for career and technical education school programs in all 50 States through 2012 (<a href="http://www.ed.gov/about/offices/list/ovae/pi/reauth/">http://www.ed.gov/about/offices/list/ovae/pi/reauth/</a> perkins.html).

Recently, the Governor, policymakers and educators have begun efforts to refocus the state on workforce preparation needs and career technical education. The Governor and the legislature approved a budget for 2007-2008 that provides \$52 million to enhance career technical education (CTE) curriculum, streamline teacher recruitment and training, maximize facilities funds, and

integrate academics into CTE courses. Specifically, part of the increased funding is designated to increase professional development opportunities for educators by giving teachers and counselors more access to CTE instruction and career counseling training. Last November, California voters passed a bond that provides \$500 million in grants for CTE facilities at K-12 schools as part of the Strategic Growth Plan.

A number of factors are important to consider about CTE teaching credentials:

- The authorized subjects list for vocational education credentials has grown to over 175 authorizations but does not include some current technology job skills.
- The occupational sectors were redefined by the U.S. Department of Education and the U.S. Department of Labor in the 1970's to reflect the changes in the nation's workforce.
- The California Department of Education officially renamed vocational education "Career and Technical Education" in 2005 when it adopted CTE standards.

#### **Senate Bill 52 (Chap. 520, Stats. 2007)**

On October 12, 2007, Governor Schwarzenegger signed SB 52 (Scott) into law. Because the bill was an urgency bill, its provisions became effective immediately upon the Governor's signature. The law does the following:

- 1. Changes the name of the credential to the Designated Subjects Career Technical Education (CTE) Teaching Credential
- 2. Requires the Commission to establish a list of authorized subjects for the CTE credential by September 30, 2007, that reflects the 15 industry sectors identified in the California career technical education model curriculum standards adopted by State Board of Education
- 3. Deletes the requirement that candidates for the CTE credential pass the state's basic skills test
- 4. Deletes the option for the Commission to test a candidate for the CTE credential in the subject to be taught
- 5. Requires that programs of personalized preparation be consistent with full-time or part-time service
- 6. Requires the Commission to convene an advisory committee to review credential requirements and make recommendations for consolidating requirements for full-time and part-time service with a focus on streamlining the credential structure without increasing the requirements for part-time service
- 7. Requires the Commission to make recommendations to the Legislature on the minimum requirements for the credential by April 1, 2008.

The Certification Division has already addressed items 1 and 2 above. The 15 sectors (see Appendix B) are drawn from 16 career clusters identified in the 1970's by V-TECS, a consortium of states and military organizations (<a href="http://www.v-tecs.org/aboutus.htm">http://www.v-tecs.org/aboutus.htm</a>). This consortium has worked over several decades to develop resources for standards-based career technical education. In 2005 the California Department of Education began drafting the first California CTE academic content standards by reviewing the identified industry sectors. They identified 15 out of 16 sectors that were applicable to career technical education for public schools. The CTE Model Curriculum Standards are organized by these 15 sectors (<a href="http://www.cde.ca.gov/be/st/ss/index.asp">http://www.cde.ca.gov/be/st/ss/index.asp</a>).

Items 3 and 4 simply eliminate obsolete language to the Education Code, and therefore, no further action is necessary. The recommendations presented later in this item and the subsequent items to be presented in December and January-February address items 5, 6 and 7 of SB 52.

#### **CTE Courses in the Public Schools**

Over the last five years the number of CTE courses offered in California's public schools has decreased from 32,456 to 24,580, a reduction of over 24%. Predictably, the number of teachers employed has also dropped from 5,865 to 4,883, a decrease of almost 18%. However, the average class size has increased slightly from 22 to 25 students, suggesting a continuing demand for these courses. The data in the table below show the reduction in CTE courses and teachers over the last five years across all CTE areas. Provided in Appendix C is the data organized by type of CTE course. Only in the Health Careers was there a notable increase in the numbers of classes, total enrollment and teachers, with some of these more than doubling. It appears that, with limited funds, schools are focusing their resources on the needs of highest demand career fields.

Statewide CTE Students, Classes and Teacher Totals 2001-2007

School Year	Course Enrollment	# of Classes	# of Teachers	Avg. Class Size	
2006-2007	610, 856	24,580	4,883	25	
2005-2006	633,972	24,370	5,046	25	
2004-2005	674,568	25,410	5,207	26	
2003-2004	690,979	26,291	5,419	25	
2002-2003	742,103	32,456	5,865	22	
2001-2002	743,268	29,768	5,837	24	

The number of CTE credentials issued over the last five years has dropped even more dramatically than the information above, which suggests that schools are rehiring experienced CTE teachers rather than recruiting new CTE teachers. Renewal of Clear CTE Credentials has increased (see Appendix D). First time CTE credentials issued annually have dropped the most, with the overall reduction at over 60% fewer first-time CTE credentials issued in 2006 than in 2001. With the increased funding resources mentioned previously in this item, California can expect a higher demand for teachers to staff the expected increased numbers of CTE classes.

#### CTE Credential Requirements Prior to the Implementation of SB 52

Career Technical Education Teaching Credentials authorize the holder to teach the "designated" vocational subjects named on the credential in grades 12 and below and organized primarily for adults in courses which are part of a program of technical, trade or vocational education. The subject that the individual is authorized to teach is determined by five years work experience in an occupation, such as computer programming, welding or landscaping, rather than based on an academic program of study. Work experience meets one requirement for the preliminary credential. The preliminary credential is valid for a five year period during which the holder is required to complete an approved two-level professional preparation program. The first level of preparation introduces the topics of lesson planning, assessment and classroom safety and must be completed within the first two years of teaching. The second level of the two-level preparation program involves more advanced coursework on teaching methodology including topics such as

lesson planning, assessment, and classroom safety and completes the preparation for a clear credential.

Teachers who hold single subject credentials in agriculture, business, health, home economics and industrial and technology education are authorized to teach vocational classes in and related to these subject matter areas without any additional authorization in both regular education classes and career technical education classes.

In addition to the requirements listed above, the current credential structure differentiates between an individual who teaches career technical courses on a part-time or a full-time basis. SB 52 requires the Commission to "convene an advisory committee to review credential requirements for designated subjects career technical education teaching credentials and make recommendations for consolidating the requirements for full-time and part-time service. It is the intent of the Legislature that the Commission focus on streamlining the credential structure by identifying the essential skills needed for successful career technical instruction in order to increase as quickly as possible the number of persons who possess a career technical education teaching credential" (Scott). The part-time credential requires half as much teacher preparation as the full-time credential. Over the last 5 years the number of part-time credentials issued annually has dropped by half while full-time credentials have dropped by one third (Appendix D).

#### **Issues Related to the Current CTE Credential Structure**

The CTE Advisory Panel developed guiding criteria for their work. It was agreed that all the panel's recommendations would be designed to meet one or more of the following:

- Increase CTE teacher supply
- Streamline CTE credential requirements
- Improve the quality of CTE teacher preparation.

Implementation of the present CTE credential structure over the past decade has resulted in several areas of concern that the Advisory Panel has discussed:

- 1. Currently, CTE teachers enter the classroom and work with students prior to participating in teacher preparation. CTE teachers are required to participate in teacher preparation after receiving a preliminary credential. For all other credential areas, an individual who holds a preliminary credential from the Commission has completed a specified amount of teacher preparation, including the teaching of English learners. Should an individual be awarded a preliminary credential based on work experience prior to participating in teacher preparation? Should an individual be required to complete an early teacher orientation when awarded a preliminary CTE credential?
- 2. The preliminary CTE credential is valid for 5 years. The employer is responsible for ensuring that the preliminary CTE credential holder completes at least a minimum level of preparation by the end of the second year of teaching. It is reported that if a school wants to continue to offer a CTE class, there are instances in which the teacher is allowed to continue teaching past the second year without completing the required initial teacher preparation. As a result many candidates, according to Regional and Occupational Centers and Programs (ROCP) and credential programs, do not complete their credential

preparation requirements until their fifth year of teaching on the preliminary credential. Should the preliminary CTE credential be valid for five years? Or should the first CTE credential be valid for a shorter period to ensure that individuals complete the teacher preparation sooner?

- 3. Workplace data show that the average number of years that an individual holds a particular job has gradually been reduced due to the faster growth and decline cycles in the workplace. Several decades ago, the average length of time an American held a specific job for was 7 years. In the 1980's this length of tenure in a position was reduced to 5 years. Today the average length of tenure in a specific job is 3 years. Workers must develop job skills much more quickly in the current highly competitive job market. Should the years of experience to qualify for a CTE credential be reduced in a corresponding manner?
- 4. Though the Commission is authorized by the Education Code to define "work experience" and has identified numerous options for an individual to utilize, industry certifications are not among the current options. If an individual holds advanced level industry certification of skills, should that count toward the experience requirement?

#### **Overarching Recommendations**

After considering the current CTE credential structure, policy initiatives related to CTE at both the state and federal level, and the criteria listed above, the CTE panel has developed recommendations related to the structure of CTE credentials, preparation of CTE teachers, and draft Program Standards for CTE preparation programs. Following are five proposed changes to the current credential structure that meet the Advisory Panel's criteria to increase teacher recruitment, streamline credential requirements, and ensure high quality preparation for CTE teachers.

## 1. Reduce the length of the term of the Preliminary CTE credential from 5 years to 3 years.

**Rationale:** Individuals teaching vocational education courses would be required to complete teacher preparation earlier in their teaching career, thereby reducing the length of time a CTE teacher is in the classroom without completing teacher preparation.

#### 2. Reduce the required number of years of work experience from 5 years to 3 years.

**Rationale:** To align with the trend of shorter tenure in an occupation, reducing the number of years of work experience required to qualify for a CTE credential would enable more individuals to meet the work experience requirement, enhancing teacher recruitment.

## 3. Add advanced industry certifications to the list of activities that qualify as work experience.

**Rationale:** By adding advanced industry certifications to the work experience options, additional individuals with expertise would be able to meet the work experience requirement thereby increasing the pool of qualified candidates. For example, an automobile mechanic with two years of experience and an industry certification would meet the experience requirement.

#### 4. Require an early teaching orientation for all new CTE teachers.

**Rationale:** Requiring an early teaching orientation as part of enrollment in a CTE program would increase teacher effectiveness by providing new CTE teachers with basic training in classroom management, lesson planning and grading, safety procedures, and special needs of students. This early orientation would be an introduction to teacher preparation and would give CTE teachers the basic "need to know" information that will support them in the first year of teaching. The remainder of the preparation program would still be completed over the three years of the credential.

#### 5. Require training for all CTE teachers in how to teach English learners.

**Rationale:** All teachers of English learner students must have appropriate English learner training (EC 44001, 44253.1, 448300(a)). Teaching English learners was addressed minimally in the current Career Technical Education program standards under the topic of "special populations." However, this type of teacher preparation should be increased and improved by updating the manner in which it is defined in the program and encouraging programs to integrate it throughout CTE teacher preparation. The revised program standards would address the knowledge and skills a teacher must have to work with English learners.

Since the majority of the CTE credential requirements are delineated in the Education Code, changes to the credential structure and the requirements for a CTE credential will require changes to the Education Code. Depending upon the discussion at this meeting, the Commission could direct staff to bring forward a legislative proposal for Commission consideration addressing the recommended changes. The Commission's Legislative Committee is scheduled to hear proposals for 2008 legislation in December 2007.

#### **Next Steps:**

In a December 2007 agenda item, the CTE Advisory Panel's proposed credential structure will be described and discussed. In the January-February 2008 agenda item, the draft Program Standards for CTE Teacher Preparation will be presented for information, and then the proposed credential structure and the draft Program Standards will be posted on the Commission's website for field review. It is expected that the draft Program Standards would return to the Commission in mid-2008 for adoption.

### Appendix A

#### **Career and Technical Education Advisory Panel Members**

Kit Alvarez Colton-Redlands-Yucaipa ROP

Paul Bott CSU Long Beach

George Brunelle Sacramento City Unified School District

Marianne Cartan Association of California School Administrators

Dale Countryman West Side ROP

Priscilla Cox California School Boards Association

Irene Fuji Eden Area ROP

Rick Graham California Teachers Association

Dennis Guido California Department of Education

Dennis Ivey California County Superintendents Educational Services Association

Darlene Le Fort Coastline ROP

Knute Momberg Stockton Unified School District

Nona Olsen Mendocino County Office of Education

Matthew Saldana Long Beach Unified School District

Joseph Scarcella CSU San Bernardino

Diana Schneider Orange County Office of Education/Central County ROP

Valerie Vuicich Fresno County Office of Education

Paul Watters Butte County Office of Education CAROCP

#### Appendix B

#### **Career Technical Education Credential Industry Sectors (Subsumed Subject List)**

#### **Agriculture and Natural Resources**

- Agriculture business management and marketing
- Agriculture mechanics
- Animal care
- Animal control
- Animal production

#### Arts, Media, and Entertainment

- Commercial Art
- Commercial Photography
- Journalism occupations
- Multimedia production

#### **Building Trades and Construction**

- Airframe and powerplant mechanics
- Boat building
- Carpentry
- Concrete placing and finishing
- Construction equipment operation
- Construction inspection
- Drafting occupations
- Drywall installation
- Floor covering installation
- Foundry work
- Furniture making, finishing and refinishing
- General contracting
- Glazing
- Heating, air conditioning, and ventilation installation
- and service
- Lathing

#### **Education, Child Development, and Family Services**

- Child care
- Elderly care services (non-medical)
- Family and human service occupations

#### **Energy and Utilities**

- Control system maintenance and repair
- Electrical power distribution

- Crop Production
- Floriculture and Floristry
- Forestry, natural resources and rural recreation
- Landscaping
- Ornamental nursery operation
- Performing arts occupations
- Stage technology
- Theatrical occupations
- Masonry
- Millwork and cabinet making
- Painting-construction
- Pipefitting and steamfitting
- Plastering
- Plumbing
- Refrigeration installation and maintenance
- Residential and commercial repair and remodeling
- Roofing
- Sheet metal fabrication
- Structural and reinforcement ironwork
- Structural pest control
- Tile setting
- Tool and die making
- Upholstering
- Welding
- Interpreter for the deaf
- Teaching/teacher aide
- Electrician
- Electronics assembly

- Electronic consumer products service
- Energy, environment and resource management
- Hybrid microelectronics
- Hydroelectric plant operations

#### **Engineering and Design**

- Engineering occupations
- Surveying

#### **Fashion and Interior Design**

- Clothing, alteration and repair
- Fabric maintenance services
- Fashion design
- Fashion manufacturing (factory and custom)
- Fashion merchandising
- Interior design

#### Finance and Business

- Accounting occupations
- Banking
- Business Management
- Financial management and services
- Income tax preparation
- Insurance occupations
- Legal office occupations

#### **Health Science and Medical Technology**

- Athletic Trainer
- Biomedical equipment technology
- Dental services
- Health care biotechnology services
- Health care diagnostic services
- Health care information services

#### Hospitality, Tourism, and Recreation

- Commercial diving
- Custodial Services
- Event and conference planning
- Food and beverage production and preparation
- Food and beverage services
- Hotel and lodging occupations
- Customer Service Representative
- Dietetics and Nutrition Service

- Industrial electronics
- Marine power plant maintenance and repair
- Robotics
- Water treatment
- Hazardous materials occupations
- Jewelry design, fabrication, and repair
- Textile design
- Textile production and fabrication
- Office occupations
- Personnel administration occupations
- Secretarial/stenography occupations
- Small business ownership and/or management
- Health care preventive services
- Health care supportive services
- Medical office services
- Nursing services
- Optical goods work
- Therapeutic services
- Interior Maintenance (residential and commercial)
- Pool and spa service
- Recreation
- Amusement and Theme Park Occupations

#### **Information Technology**

- Communications Electronics
- Computer Applications
- Computer Electronics
- Computer Maintenance and Repair
- Computer Programming

#### **Manufacturing and Product Development**

- Computer-assisted manufacturing
- Electronic publishing
- Industrial ceramics manufacturing
- Instrument repair
- Machine tool operation and machine shop
- Major appliance repair
- Metal fabrication
- Office machine repair

#### Marketing, Sales, and Service

- International Trade
- Marketing

#### **Public Service**

- Barbering
- Cosmetology
- Court reporting
- Fire control and safety
- Fire fighting
- Fire sprinkler installation

#### **Transportation**

- Automobile Detailing
- Automotive Body Repair and Refinishing
- Automotive Brake Installation and Repair
- Automotive Electrical Systems Service and Repair
- Automotive Heating and Air-Conditioning Service
- Automotive Mechanics
- Automotive parts counterperson
- Automotive Suspension and Steering Repair
- Automotive Transmission and Transaxle Service and Repair
- Avionics
- Bicycle repair
- Diesel equipment mechanics

- Computer Software Operation
- Computer systems operation
- Information processing
- Information systems management
- Telecommunications
- Plastics and composites manufacturing occupations
- Printing and graphics occupations
- Product development, testing and demonstration
- Small appliance repair
- Technical illustration
- Waterfront manufacturing
- Real Estate
- Retail occupations
- Law enforcement occupations
- Locksmithing and safe repair
- Manicuring and pedicuring
- Motor sweeper operator
- Shoe repair
- Protective and security services
- Electric Motor Repair
- Engine Performance Technician
- Heavy equipment maintenance and repair
- Industrial maintenance
- Motorcycle service and repair
- · Railroad operations
- Small engine service and repair
- Tow truck operation
- Transportation occupations, travel services
- Truck and bus driving
- Warehousing

### **Appendix C**

## CTE Enrollment, Courses and Teachers 2001-2007

Year	Total Enrollment	# of Classes	# FTE Teachers	Avg. Class Size				
Agriculture Education								
2006-2007	2006-2007 54,213		473.62	23.1				
2005-2006	2005-2006 56,685		482.77	24.2				
2004-2005	58,393	2,312	477.62	24.7				
2003-2004	57,039	2,284	468.19	24.0				
2002-2003	56,906	2,497	481.58	21.8				
2001-2002	58,062	2,490	493.68	22.7				
	Bu	siness-Marketin	ng					
2006-2007	9,464	441	91.58	21.5				
2005-2006	9,247	383	83.65	24.0				
2004-2005	9,325	380	87.91	24.0				
2003-2004	9,634	398	89.7	23.8				
2002-2003	9,824	461	90.66	20.7				
2001-2002	8,802	363	79.59	23.5				
	]	<b>Business Office</b>						
2006-2007 126,751		4,838	950.09	26.1				
2005-2006	2005-2006 128,579		983.92	26.5				
2004-2005	2004-2005 148,403		1,106.67	26.6				
2003-2004	003-2004 151,001		1,202.07	25.2				
2002-2003	002-2003 171,516		1,406.33	20.4				
2001-2002 169,071		6,993	1,336.39	23.5				
	Consur	ner-Home Econ	omics					
2006-2007	109,682	4,082	783.47	26.7				
2005-2006	118,415	4,293	854.36	27.2				
2004-2005	123,095	4,349	863.7	27.8				
2003-2004	126,867	4,485	899.74	27.5				
2002-2003	137,126	5,180	953.02	25.5				
2001-2002	140,462	5,157	994.29	26.3				
	]	<b>Health Careers</b>						
2006-2007	12,953	501	108.37	25.9				
2005-2006	11,980	413	92.89	28.2				
2004-2005	12,716	451	90.17	27.5				
2003-2004	11,148	410	90.2	26.5				
2002-2003	6,877	373	51.25	17.3				
2001-2002	5,797	232	52.91	23.3				

	Home Econe	omics Related O	ccupations	
2006-2007	35,166	1,496	304.74	23.5
2005-2006	33,357	1,370	289.64	24.0
2004-2005	,		270.15	24.6
2003-2004	· · ·		255.23	24.3
2002-2003	33,230	1,221 1,478	267.77	21.7
2001-2002	32,863	1,338	271.05	23.5
<u> </u>	<u> </u>	Technology Ed		
2006-2007	52,067	2,199	435.95	23.6
2005-2006	54,166	2,189	456.67	24.3
2004-2005	57,021	2,238	459.35	24.8
2003-2004	59,654	2,322	482.1	24.8
2002-2003	61,000	2,532	481.55	23.3
2001-2002	60,994	2,516	505.7	23.5
2001 2002		tronics Technolo		20.0
2006-2007	9,740	433	90.45	22.5
2005-2006	10,254	435	90.91	23.6
2004-2005	11,264	460	95.53	24.3
2003-2004	13,766	553	117.32	24.2
2002-2003	16,194	685	132.37	23.0
2001-2002	14,701	623	127.22	23.4
2001 2002	*	onics Manufactı		
2006-2007	13,804	586	121.74	23.3
2005-2006	16,092	624	130.45	25.7
2004-2005	16,363	652	136.95	24.8
2003-2004	17,800	673	144.8	25.1
2002-2003	17,878	772	140.88	22.6
2001-2002	18,007	744	147.28	24.2
2001 2002	,	s in Industrial T		
2006-2007	47,503	1,770	328.52	26.4
2005-2006	51,585	1,921	362.08	26.3
2004-2005	53,741	1,978	370.43	26.8
2003-2004	55,473	2,013	380.08	26.8
2002-2003	60,246	2,248	416.62	26.1
2001-2002	63,045	2,364	443.19	26.2
2001 2002		Energy, Transpo	l.	
2006-2007	28,728	1,175	243.28	24.4
2005-2006	32,447	1,241	270.33	25.9
2004-2005	34,341	1,282	276.02	26.5
2003-2004	38,076	1,402	296.05	26.4
2002-2003	40,030	1,641	301.39	23.7
2001-2002	37,536	1,509	301.99	24.2

	Visual Co	mmunications,	Drafting				
2006-2007	27,509	1,116	211.84	24.6			
2005-2006	2005-2006 29,131		233.61	24.7			
2004-2005	31,249	1,211	244.77	25.4			
2003-2004	33,389	1,277	262.1	25.7			
2002-2003	34,788	1,538	266.33	22.3			
2001-2002	36,288	1,501 285.77		23.4			
	Visual Co	mmunications, (	L Graphics				
2006-2007	34,729	1,329	273.16	26.1			
2005-2006	33,734	1,222	259.01	27.0			
2004-2005	35,620	1,282	263.09	27.1			
2003-2004	34,791	1,261	266.31	27.1			
2002-2003	35,946	1,457 271.12		24.1			
2001-2002	34,043	1,291	261.27	25.5			
Diversified Occupations							
2006-2007 5,952		393	77.3	15.0			
2005-2006	5,000	269	63.44	17.0			
2004-2005	5,404	284	65.11	17.3			
2003-2004	4,632	252	58.2	18.1			
2002-2003	6,197	384	70.32	15.8			
2001-2002	5,139	247	59.49	20.2			
	Ap	plied Technolog	70				
2006-2007	14,972	545	106.63	27.3			
2005-2006	14,288	501	103.12	27.9			
2004-2005	15,592	549	115.37	27.3			
2003-2004	15,486	552	116.67	27.4			
2002-2003	18,555	706	133.74	25.6			
2001-2002	21,363	746	149.35	27.0			

### Appendix D

## Vocational Education Credentials Recommended 2000-01 through 2005-06

	Document	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Part-time Credentials	First-time	963	703	530	566	364	156
	New Type	172	377	324	240	174	196
	Re-issuance	2	19	23	48	31	32
	Renewals	157	207	202	217	265	260
	Total	1294	1306	1079	1071	834	644

	Document	2000-01	2001-02	2002-03	2003-04	2004-05	2005-06
Full-time Credentials	First-time	1764	1448	1232	1289	868	415
	New Type	860	1351	1279	842	904	636
	Re-issuance	32	65	107	140	124	121
	Renewals	1172	1437	1466	1442	1450	1287
	Total	3828	4301	4084	3713	3346	2459